Arbor Day Foundation™

PARTNERS IN COMMUNITY FORESTRY
2025 CONFERENCE

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How do we develop an urban forestry workforce that meets the needs of both rural professionals and communities?

Agenda

01

Montana's
Rural Context

02

Multi-Layered
Research
Approach

03

Community
Survey

04

Professional
Survey

05

Degree and
Non-Degree
Program
Assessment

06

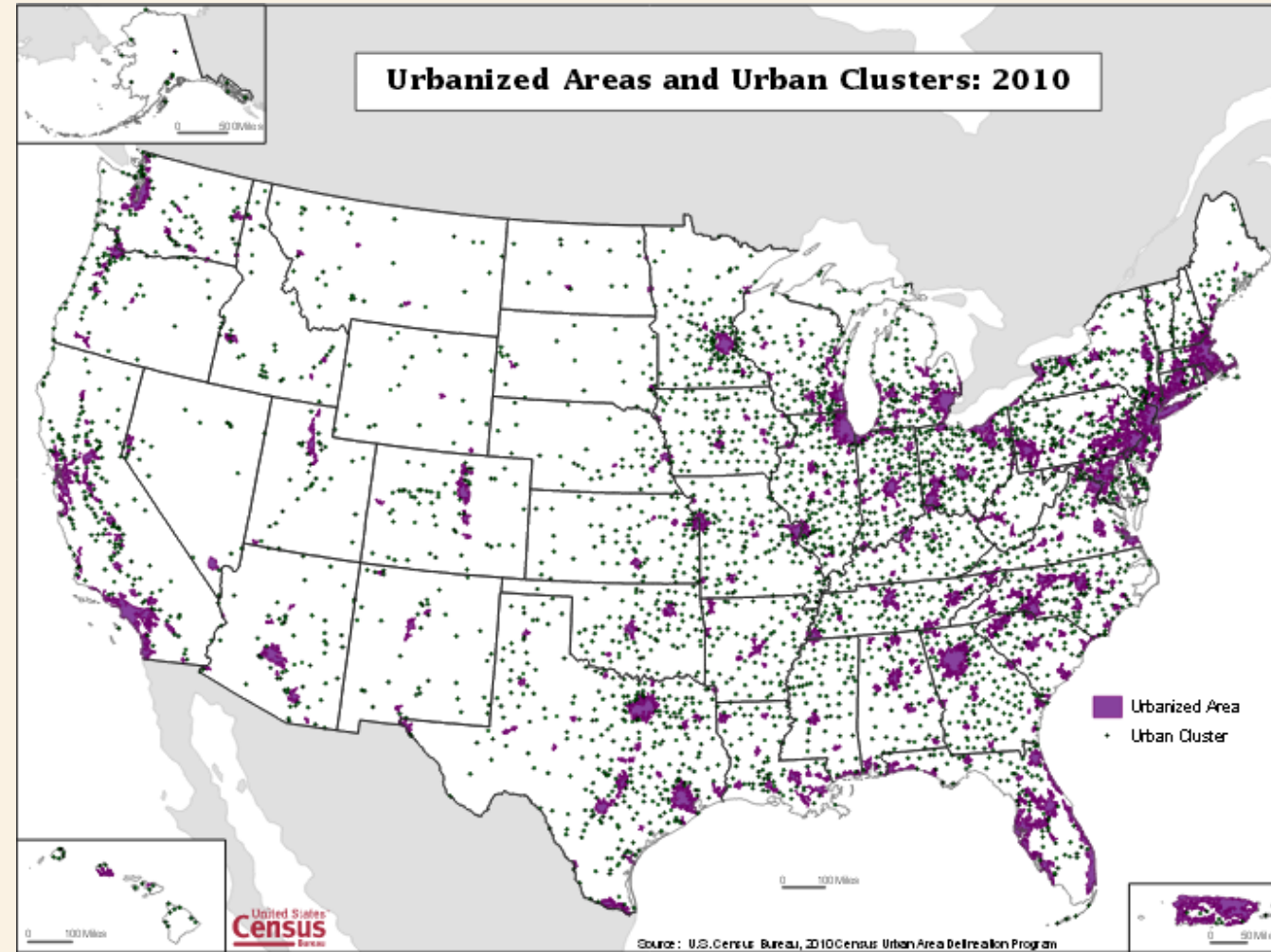What's Next!
Designing a
Workforce
Program

MONTANA'S
RURAL CONTEXT

What image comes to mind when you think of a rural community?

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Montana URBAN & COMMUNITY FORESTRY ASSOCIATION

RMC

MONTANA DNRC

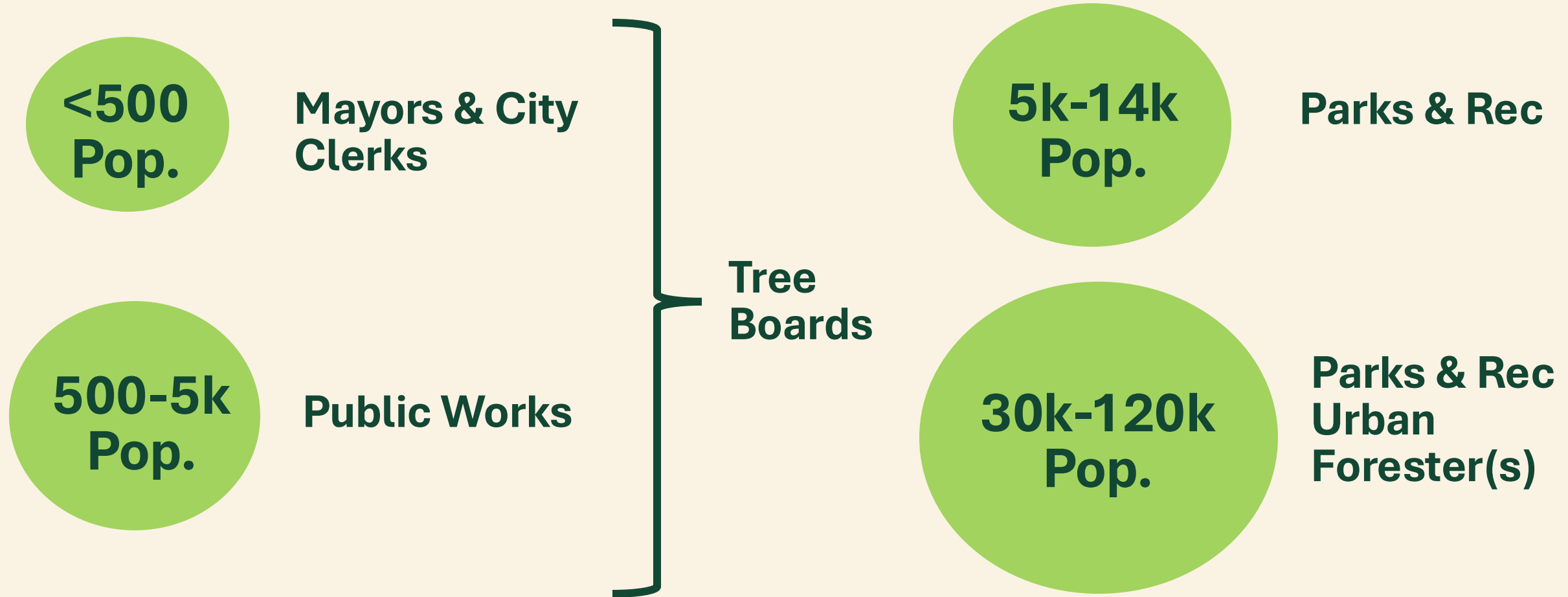PARTNERS IN COMMUNITY FORESTRY CONFERENCE 2025

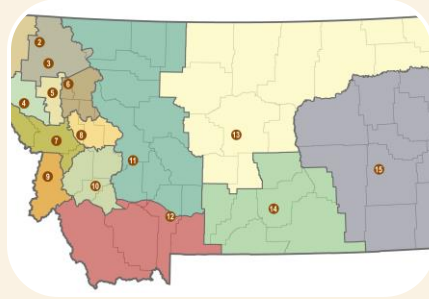ARBORDAY.ORG

Montana's landscape is largely rural

- Largest city (Billings): ~120,000

- Only 6 cities are over 30,000

- 91% of Montana's 128 **incorporated cities** have fewer than 5,000 people

- 90% of incorporated and unincorporated cities and towns are under 2,500 people

Urbanized Areas and Urban Clusters: 2010

Urbanized Area
Urban Cluster

Source: U.S. Census Bureau, 2010 Census Urban Area Delineation Program

Tree responsibility trends

<500 Pop. — **Mayors & City Clerks**

500-5k Pop. — **Public Works**

} **Tree Boards**

5k-14k Pop. — **Parks & Rec**

30k-120k Pop. — **Parks & Rec Urban Forester(s)**

Role of other urban forestry professionals

State

Nonprofits

Tree Care Companies
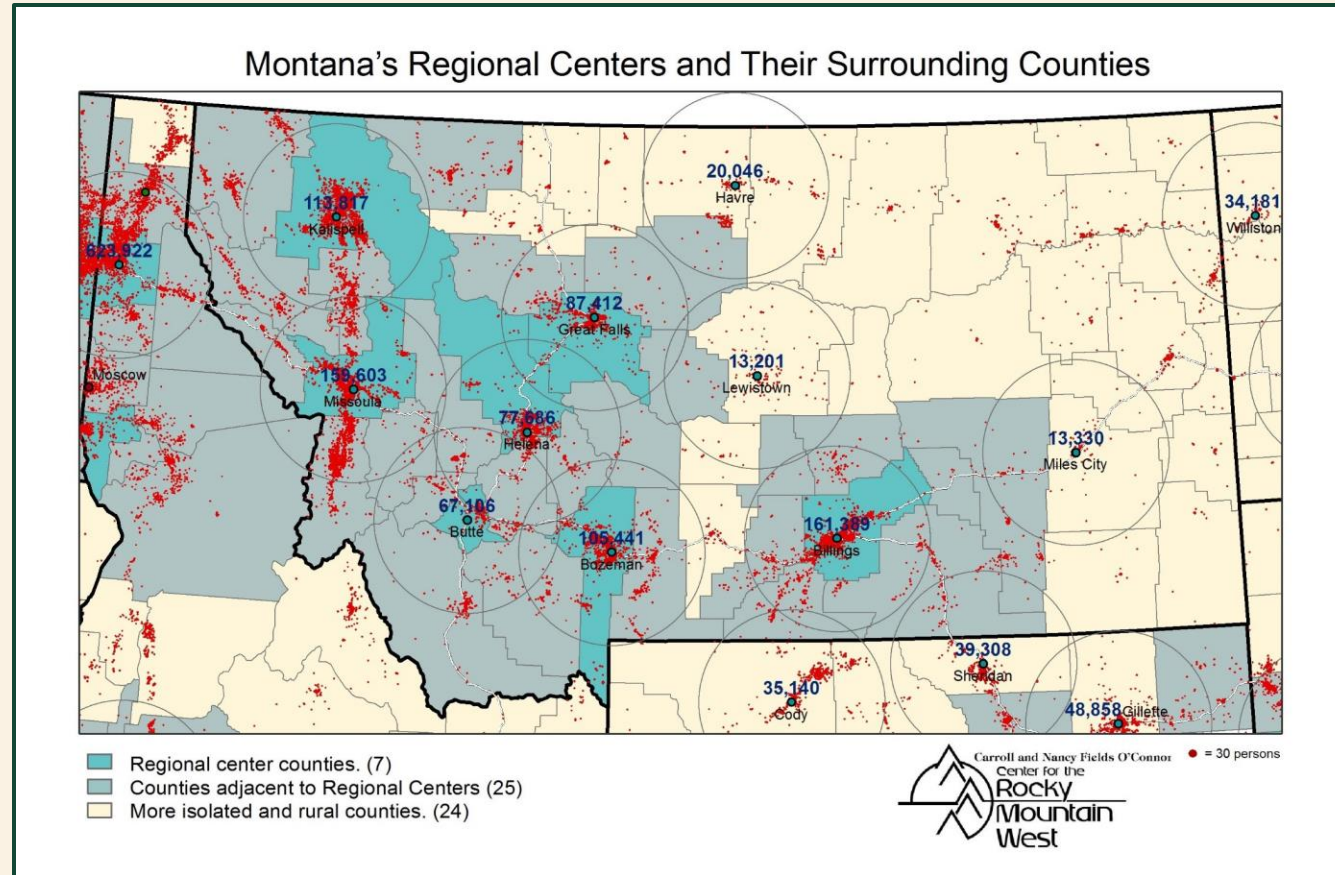

Landscapers

Nurseries

Utility Companies

The need for a targeted workforce strategy

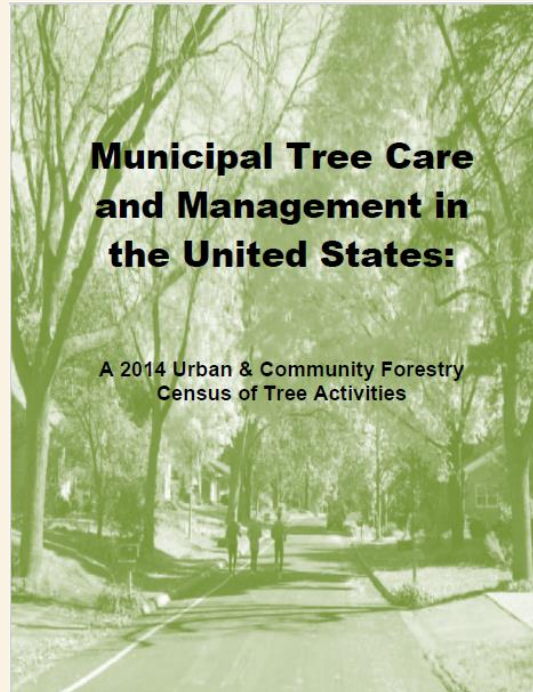Workforce opportunities and barriers vary by geography, size, and resources

Montana's Regional Centers and Their Surrounding Counties

Regional center counties. (7)
Counties adjacent to Regional Centers (25)
More isolated and rural counties. (24)

MULTI-LAYERED RESEARCH APPROACH

Adapting existing survey designs

Community Survey

Municipal Tree Care and Management in the United States: A 2014 Urban & Community Forestry Census of Tree Activities

Hauer & Peterson, 2016

Professional Survey

Journal of Forestry (2025) 123:467–484
https://doi.org/10.1007/s44392-025-00036-x

ORIGINAL PAPER

Assessment of Forestry Professional Development Needs in Wisconsin

Zoe Kaminsky[1,2] · Les Werner[3] · Rebecca L. Franzen[3] · Kendra R. Liddicoat[3] · Melinda Vokoun[3]

Received: 13 December 2024 / Accepted: 29 April 2025 / Published online: 30 May 2025
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Abstract
A well-trained workforce is imperative to managing effects of climate change, wildfires, stakeholder conflicts, and spread of pests and diseases. We conducted a survey to assess forestry training needs across Wisconsin. Our questionnaire addressed (i) skill gaps and training preferences of forestry professionals, (ii) barriers that prevent training engagement, and (iii) training outcomes that motivate participation. Survey participants represented urban forestry and forest management employment areas. Survey results indicate that tree and forest health, GIS, and conflict resolution are the most significant skill gaps for forestry professionals in Wisconsin. Job responsibilities and lack of awareness of training were most preclusive to professional development participation, while respondents were motivated by learning new skills and performing their job more effectively.
Study Implications: Professional development is an intrinsic element to the forestry discipline. Providing relevant, valuable, and accessible training opportunities supports the continued development of a robust workforce. Our study confirms the discipline has neither sufficiently closed certain skill gaps, nor has it sufficiently addressed persistent barriers that impact training participation. Training providers may apply our findings and recommendations to refine their offerings and amplify their impact in helping professionals advance the forestry discipline.

Keywords Professional Development · Forestry Skill Gaps · Training · Continuing Education · Needs Assessment Survey

Kaminsky et al., 2025

Advisory committee (16 members)

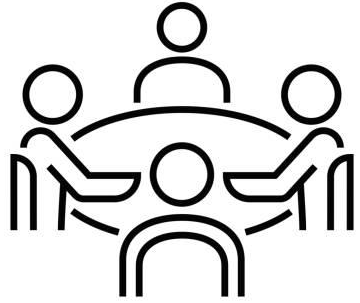|	
Municipalities	Tree Boards
Nonprofits	State
Private Sector	Academia

3-part framework

Community Survey

Professional Survey

Assessment of Degree and Non-Degree Programs

Focus groups

Group 1: urban, tribal, and utility foresters, nonprofits, academia, and state

Group 2: tree care companies, nurseries, and landscapers

What skills make you good at your job?

How useful was the previous training you completed?

What training should be offered in the future?

Survey questions

Community Survey
- Inventory & tree management
- Tree ordinances & policies
- Tree operations
- Management budgets
- Partnerships, volunteers & contractors

Professional Survey
- Training format preferences
- Motivations for pursuing trainings

Shared Focus
- Training needs
- Training barriers

Survey distribution

Initial invitation via email — **April**

Social media Newsletters — **May**

Follow up emails — **May-June**

Phone call — **June**

Final personalized email — **July**

71 Cities & Towns

93 Urban Forestry Professionals
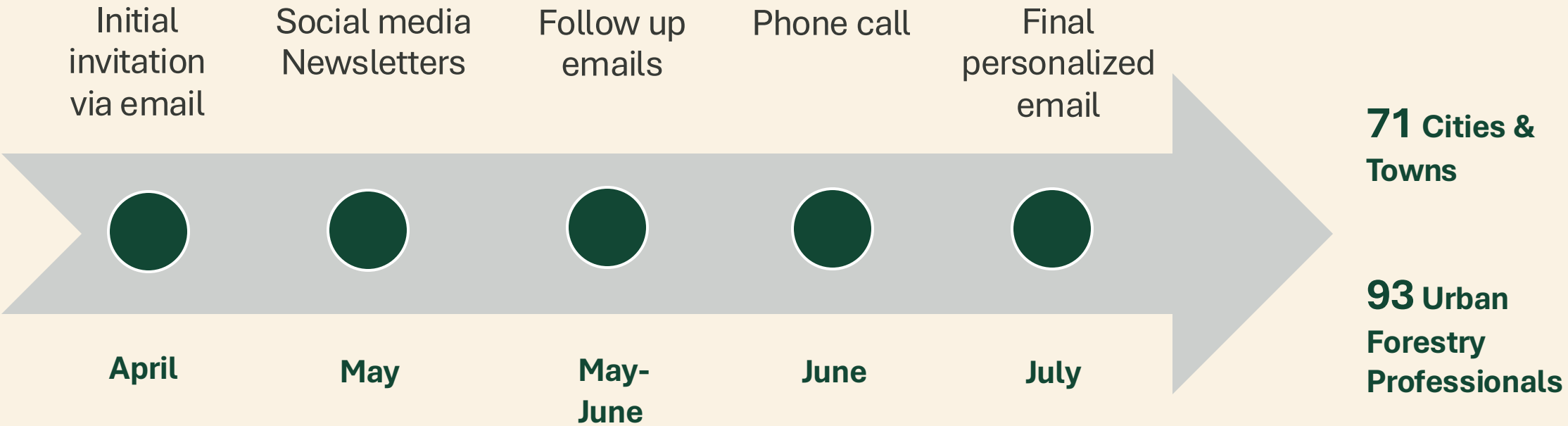
Partners

Montana Nursery and Landscape Association

Association of Montana Turf, Ornamental, and Pest Professionals

Montana Department of Natural Resources and Conservation

ISA Rocky Mountain Chapter

Montana State University Extension

Utility companies
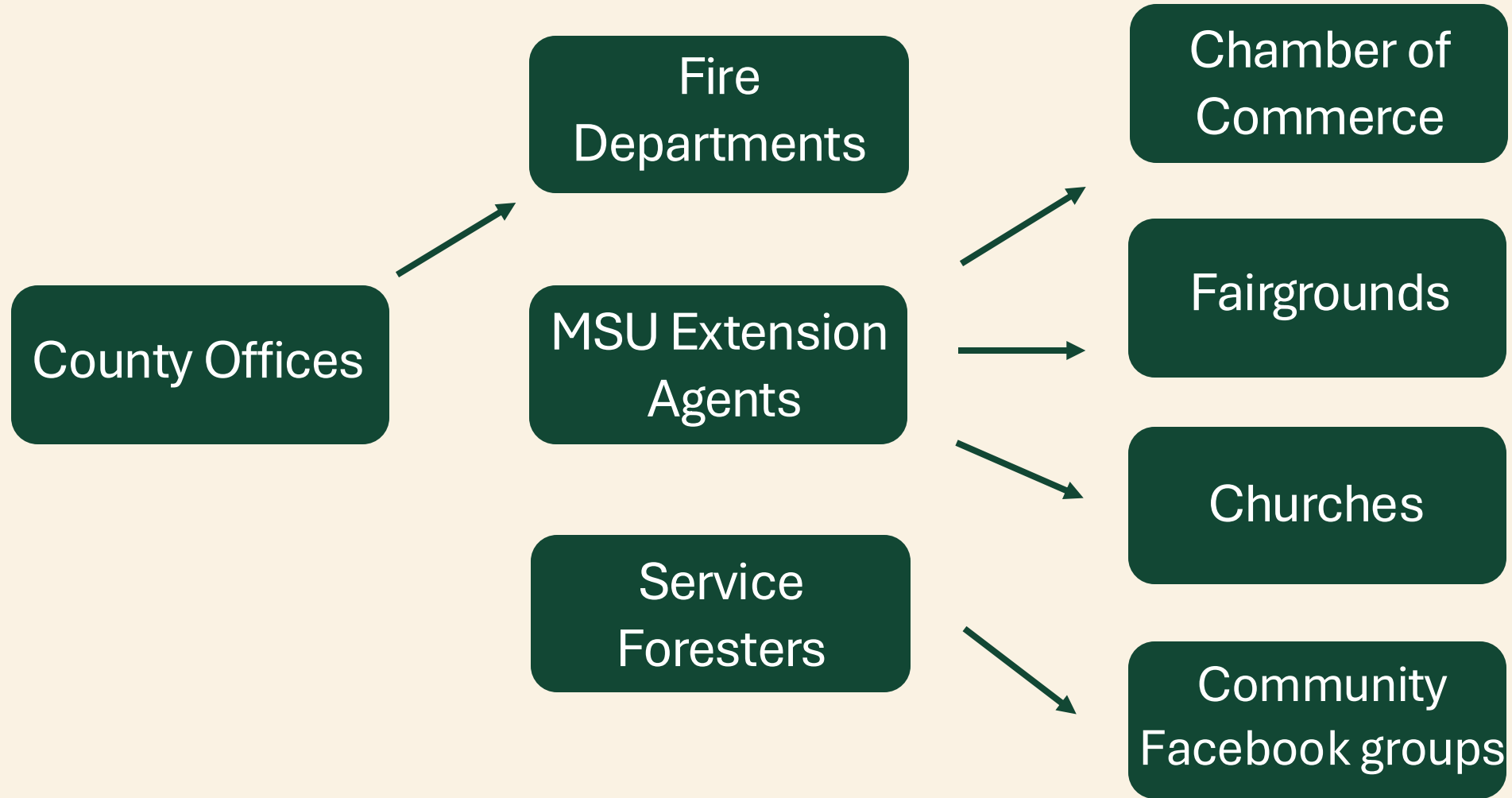
Degree and non-degree program assessment

Content analysis of 27 higher education institutions

Discover What's Here

40,000+ Students
16 Colleges
1 Application

MSU		
School	Department	Course
MSU - Billings	Biological and Physical Sciences	BIOO 433/34 Plant Physiology and Lab
Gallatin College MSU		No Relevant Course Work
Northern	Agriculture	AGSC 102 Agricultural Plant Science
Northern	Agriculture	AGSC 230 Agricultural Pest Control
Montana Technological University	Biological Sciences	BIOO 235 Rocky Mountain Flora
Montana Technological University	Biological Sciences	BIOE455 Plant Ecology

COMMUNITY SURVEY FINDINGS

Community: Technical training needs

<500 Pop.
- **Tree selection**
- Tree planting
- Running a city tree watering program

3k-14k Pop.
- Tree maintenance
- Small tree pruning
- Large tree pruning
- **Tree selection**

500-3k Pop.
- Uplifted sidewalks
- **Tree selection**
- Tree inventory

30k-120k Pop.
- **Tree selection**
- Uplifted sidewalks
- Tree maintenance

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Photo: Brenna McCabe

Community: Social training needs

<500 Pop.

500-3k Pop.

3k-14k Pop.

30k-120k Pop.

Identifying funding sources for projects

Grant writing

Approaching organizations for funding

Involving school kids in tree projects

Advocating for UCF at city council

PROFESSIONAL SURVEY FINDINGS

Technical training needs & interests

Training Topic Rank by Skill Gap
Pest and disease diagnosis ☆
Technology & AI applications
Conducting site assessments
Researching & experimenting with new plant varieties
↓ ↓ ↓ ↓
Inventory management
Tree pruning
Beginner arborist skills
Planting techniques

Training Topic Rank by Interest
Pest and disease diagnosis ☆
Weather related tree mortality
Soil quality & management
Tree care & maintenance
↓ ↓ ↓ ↓
Technology & AI applications
Optimizing contracting processes
Inventory management
Urban Forest Master Planning

Training need

≠

Training desire

Social training needs & interests

Training Topic Rank by Skill Gap
Strategic planning ☆
Digital & social media communication
Grant writing & management
Policy writing & creation
↓ ↓ ↓ ↓
Business management
Event planning
Delivering effective public presentations
Advocating for science-based practices

Training Topic Rank by Interest
Strategic planning ☆
Advocating for science-based practices
Team building & leadership
Training other industry professionals
↓ ↓ ↓ ↓
Doing business with nurseries
Volunteer management & support
Event planning
Fundraising

Training need

≠

Training desire

Barriers to participation
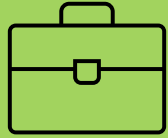
Workload & job responsibilities (66%)

Unaware of training opportunities (56%)

Inconvenient training location (47%)

Training motivation

Training Outcome	Training Motivation Composite Score
Learning new skills	20.78
Ability to perform job more effectively	20.41
Personal growth	20.04
More confident in job performance	19.66
Sense of achievement	17.96
Ability to perform job more safely	17.81
Peer networking	17.00
Improved reputation in the industry	16.81
Job promotion	10.88
Access to more clients/customers	10.75
Salary increase or bonus	10.35
Ability to charge higher prices for goods or services	8.17

Training logistics preferences

Preferred professional development settings

- Local professional conferences (84%)
- Classes/workshops/training (84%)
- Field tours (65%)
- Local networking events (60%)
- On the job training (60%)

Desired training formats

- In-person, classroom or field-based (91%)
- Online, live & instructor-led (53%)
- Hybrid (49%)
- Short webinars (49%)

51-150 miles Maximum distance willing to travel to training (34%)

DEGREE AND NON-DEGREE PROGRAM FINDINGS

Photo: DocFreeman24

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Higher education in Montana

27 Schools

University of Montana System

    7 colleges/universities

Montana State University System

    6 college/universities

Community Colleges – 3

Tribal Colleges – 7

Private Colleges - 3

College Enrollment Rates By High School Graduating Class

High School Graduates And MUS Enrollment By High School Graduating Class
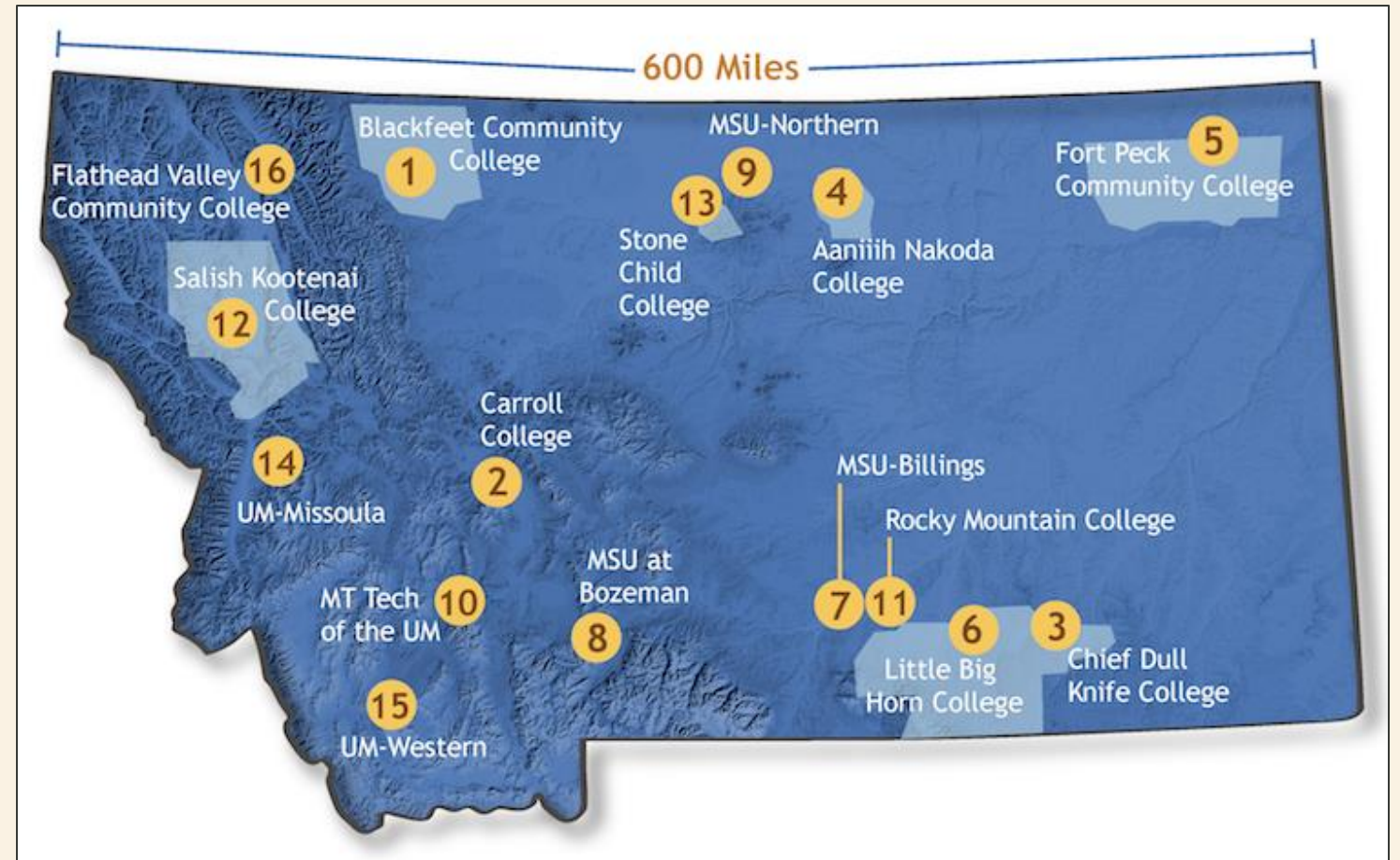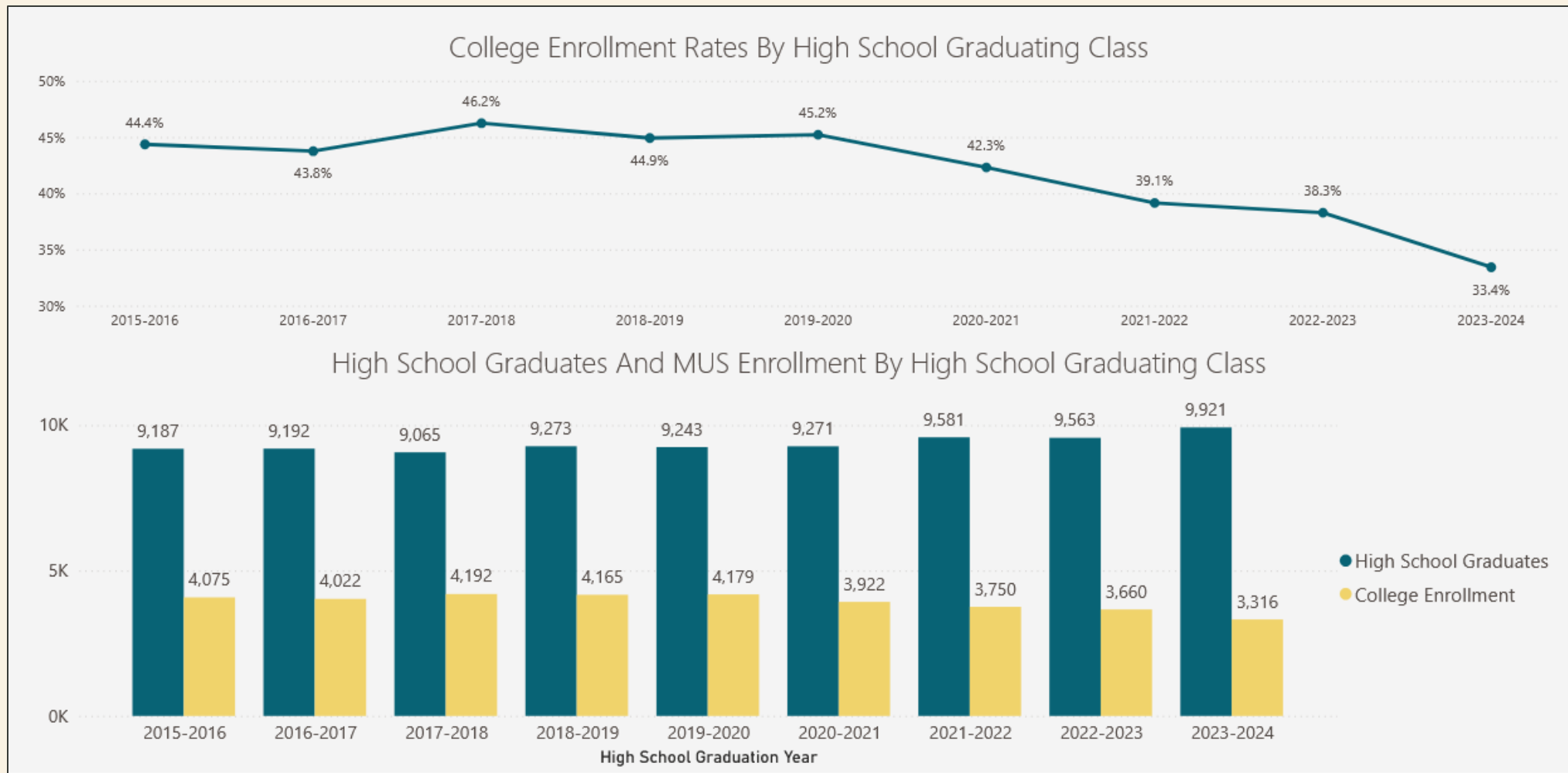
Source: MT OPI Montana High School Students & College Readiness, https://gems.opi.mt.gov/student-data

Enrollment in the Montana University System is declining

Source: Montana University System Dashboards, https://mus.edu/data/dashboards/degrees.html

Increase in Certificate Awards

COMPLETED COLLEGE/UNIVERSITY ACCREDITED DEGREE PROGRAMS

Two-year associate degree with a minimum of two courses directly related to arboriculture plus two years of practical full-time experience in arboriculture.

Four-year bachelor degree with a minimum of four courses directly related to arboriculture plus one year of practical full-time experience in arboriculture.

ASSESSMENT-BASED CERTIFICATE PROGRAMS (DIPLOMAS, CERTIFICATES)

900 hours of assessed training with a minimum focus of 90 hours directly related to arboriculture plus two years of practical full-time experience in arboriculture.

1,800 hours of assessed training with a minimum focus of 180 hours directly related to arboriculture plus one year of practical full-time experience in arboriculture.

Higher education in Montana

Across the Montana University System

Montana State University System

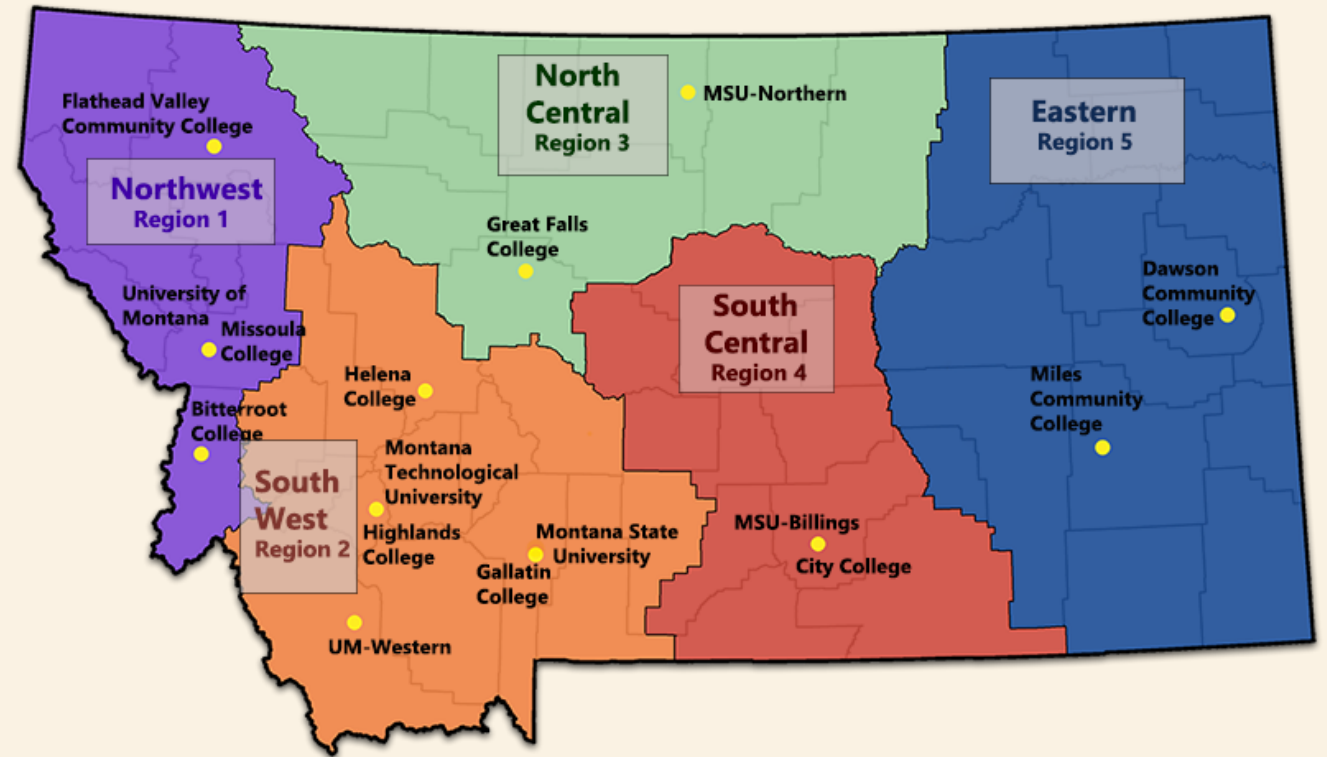   A.S. of Science/Applied Science

    1 B.S. in Forestry

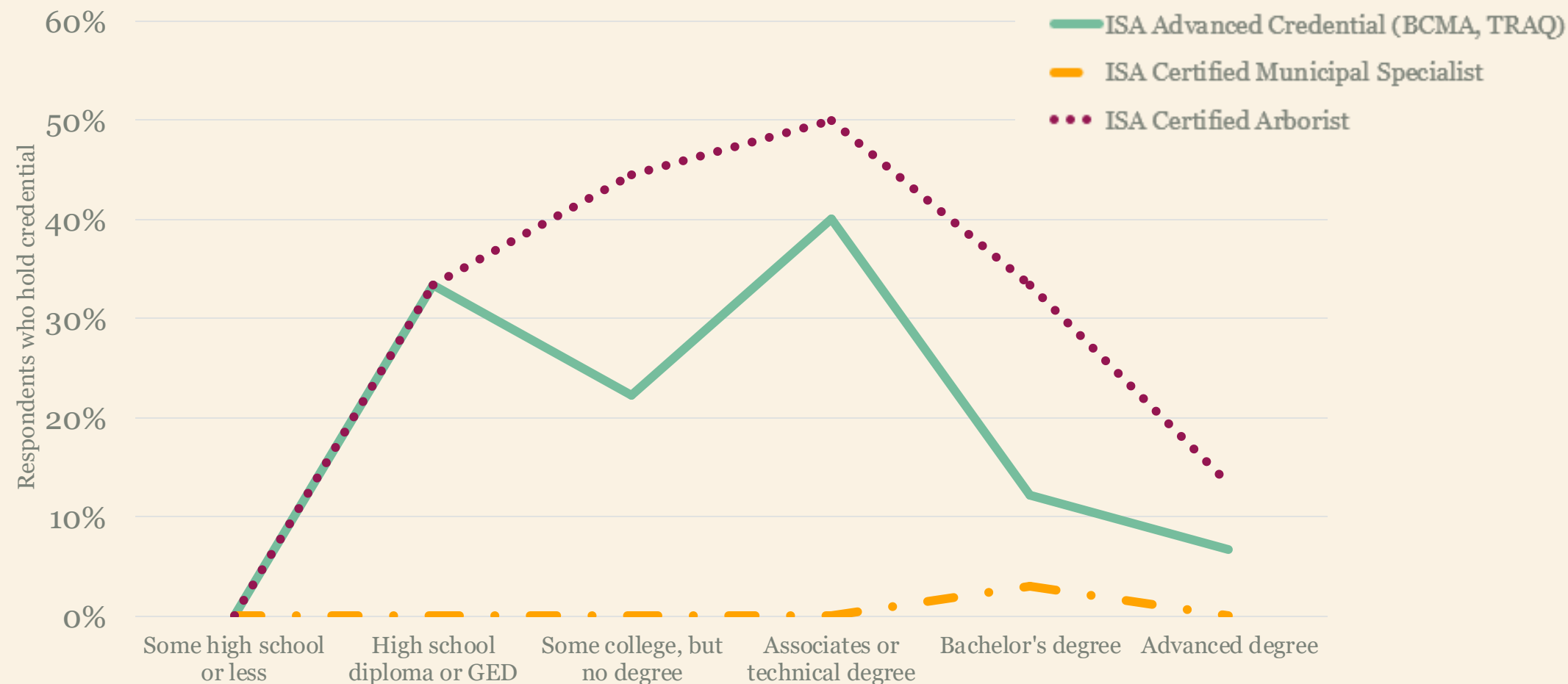Tribal Colleges

    A.S. and B.S. Forestry

No certificate programs

No direct urban forestry programming
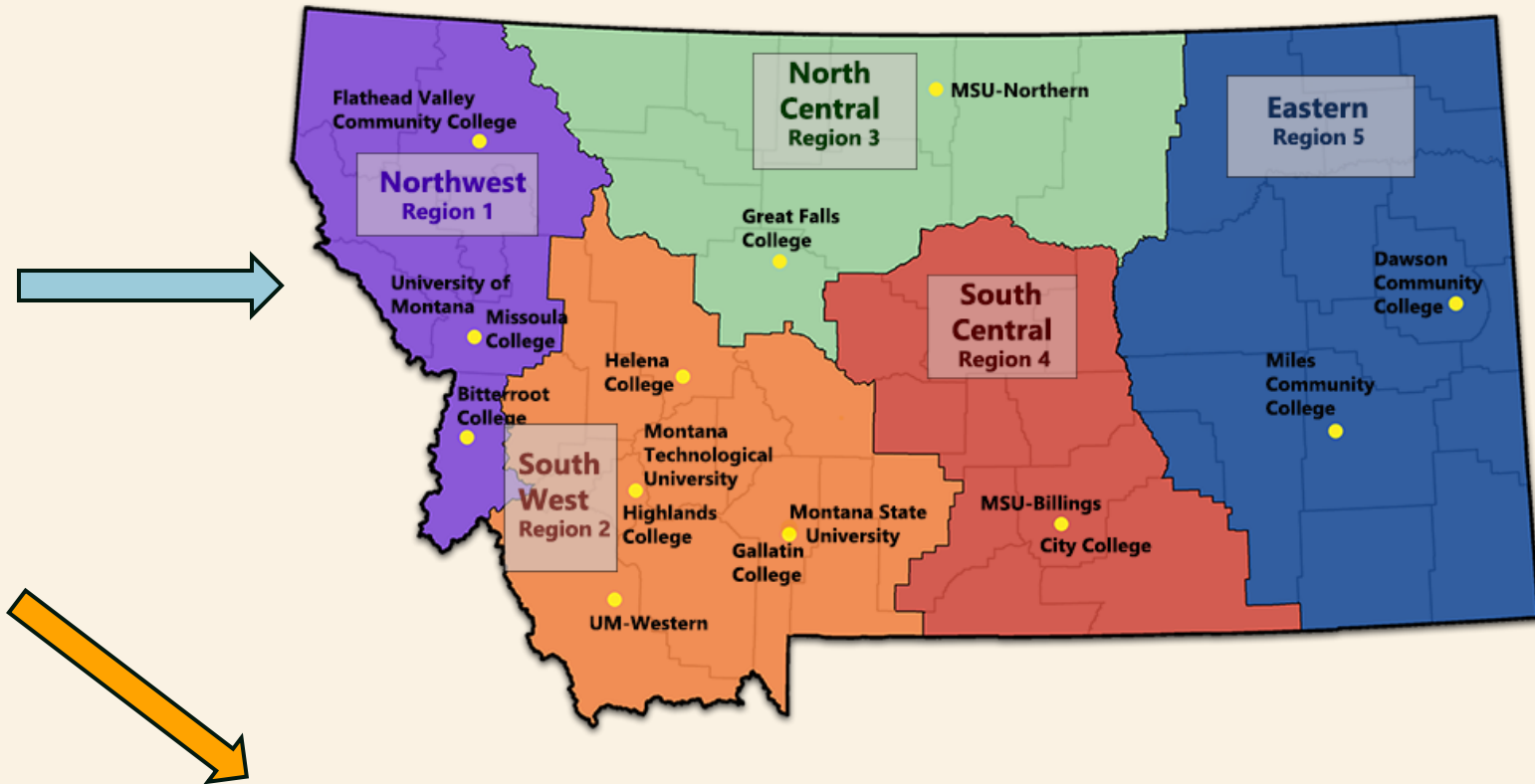
Natural resource-focus

Which Areas of Knowledge Will the ISA Certified Arborist® Exam Cover?

1. Tree Biology—11%
2. Tree Identification and Selection—9%
3. Soil Management—7%

4. Installation and Establishment—9%
5. Pruning—14%
6. Diagnosis and Treatment—9%
7. Trees and Construction—9%
8. Tree Risk—11%
9. Safe Work Practices—15%
10. Urban Forestry—6%

Limited options

Largely not addressed

University of Massachusetts Amherst

College of Natural Sciences
Stockbridge School of Agriculture

Get a head start on your AS or BS degree

The certificate can be earned by both current UMass students and non-matriculating University+ students, and all credits earned for the certificate can be applied either to the **Associate of Science degree in Arboriculture and Community Forest Management** at Stockbridge School of Agriculture, or to the **Bachelor of Science degree in Natural Resources Conservation** in the Department of Environmental Conservation. Certified arborists can earn *both* academic credits and continnuing education Unites (CEUs).

Fall course offerings

NRC 232 Principles of Arboriculture 3cr; plus 36 CEUs for certified arborists

SUSTCOMM 335 Plants in Landscape 4cr

STOCKSCH 106 Soil Science and Management 3cr (also available in summer)

Spring course offerings

NRC 310 Community Forestry 3cr; plus 36 CEUs for certified arborists

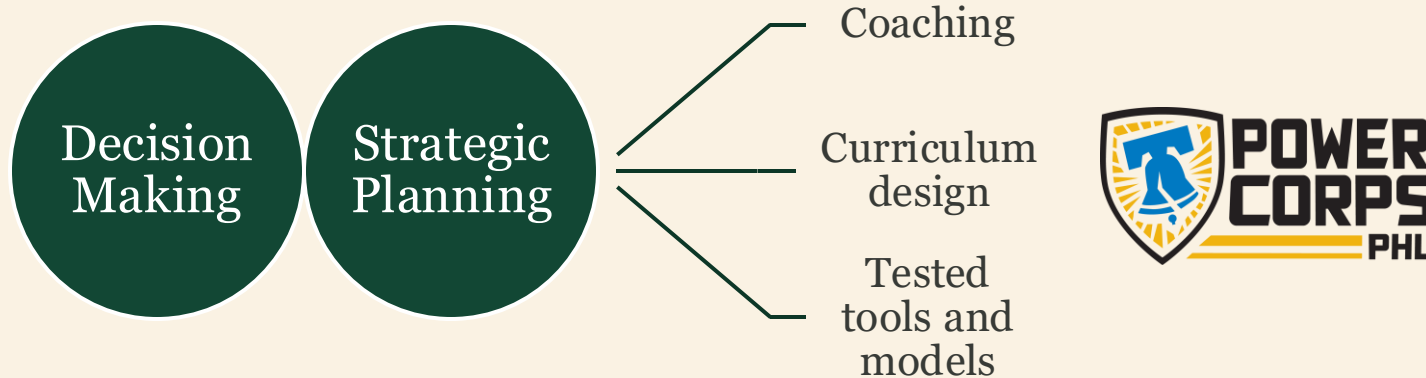NRC 235 Sensible Pruning for Beginners and Experts 2cr; plus 24 CEUs for certified arborists

A paid training pathway that connects Montana youth to urban forestry careers—developing local skills, supporting employers, and strengthening communities.

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Leadership committee

Coalition of 8 statewide and national partners

Decision Making

Strategic Planning
- Coaching
- Curriculum design
- Tested tools and models

POWER CORPS PHL

MONTANA YOUTH URBAN FORESTRY WORKFORCE INITIATIVE

Join us in building a paid training pathway that connects Montana youth to urban forestry careers—developing local skills, supporting employers, and strengthening communities.

VISION: Engage...

youth from Montana communities in:
- training & education
- connection to employment/opportunity in their home town or state

employers in:
- expanding & amplifying services for local, skilled workers

communities in:
- stewardship for urban & community forestry
- training & upskilling for state, public, private, and nonprofits

Who the Program is for

Young adults (18 -26) who:
- Have a high school diploma or GED
- Find the traditional educational path unappealing
- Have a passion for working outdoors
- Are motivated to give back to their community
- Seek steady employment in their hometowns
- Thrive with mentorship and hands-on learning

Goals & Impact
- Provide hands-on, paid learning, & mentorship
- Create pathways to certifications & steady jobs
- Build a local workforce to care for & manage community forests
- Employers and communities working together to create meaningful, sustainable jobs

Why Partner with Us
- Access trained youth ready to enter the workforce
- Align curriculum with your needs & staffing gaps
- Support your entry-level hiring with a pipeline of talent
- Raise your profile as a leader in workforce development
- Join statewide leaders building urban forestry capacity

To learn more contact: Dr. Kelly Franklin, MUCFA.info@gmail.com

Our Leadership Team

This statewide initiative is guided by a coalition of eight partners:

Montana Conservation Corps

Montana Department of Natural Resources and Conservation

Montana Nursery and Landscape Association

Montana State University Extension

Montana Urban and Community Forestry Association

PlanIT Geo

PowerCorpsPHL

Reach Higher Montana

A Whole Person Approach to Reentry Workforce Training

PRESENTED BY

VIKRAM KRISHNAMURTHY

Senior Director, Careers & Opportunities
American Forests

vkrishnamurthy@americanforests.org

TARA COSTANZO

Outreach and Education Lead
International Society of Arboriculture

tcostanzo@isa-arbor.com

WHY REENTRY?

- Justice perspective: focus on reducing recidivism

- Our industry: demand for reliable, trained workers; ties to workforce equity

- For the individual: livelihood, overcoming barriers, stability, economic mobility

The importance of language

Words matter.

Person-first terminology reinforces **dignity**, **respect** for the individual, **humanity**

Reentry, justice-impacted, fair chance employment, formerly incarcerated

Negative terminology reinforces **stigmas, disenfranchisement, dehumanization**

Inmate, prisoner, convict, felon, criminal, offender, ex-offender

UNDERGROUND SCHOLARS INITIATIVE

LANGUAGE GUIDE

A GUIDE FOR COMMUNICATING ABOUT PEOPLE INVOLVED IN THE CARCERAL SYSTEM

http://tiny.cc/USILanguageGuide

Could you overcome these barriers to hold a steady job?

Life experience

- Incarceration
- Under/unemployment
- Discrimination
- Lack of housing
- Lack of transportation
- Childcare
- Mental/emotional health
- Substance abuse
- Domestic violence
- Experiences with authority

Employment experience

- Making a living wage
- Pay equity
- Job applications (the "box")
- Conflict in the workplace
- Seasonal/part-time employment
- Lack of training
- Personal finance – direct deposit, e.g.
- Computer skills
- Education
- Access to benefits, including health care

83%

of individuals lack a driver's license upon release.

U.S. Dept. of Justice, Washington Post (2019).

IS YOUR DRIVER'S LICENSE SUSPENDED?

Join us for a free legal clinic in Dallas to get information and advice about steps to take to address ticket-related court debt and get your driver's license back.

Thursday, May 18, 2023 5:00-8:00 PM
Miles of Freedom - MLK, Jr. Community Center
2922 MLK, Jr. Boulevard, Building A, Ste. 118
Dallas, TX 75215

Registration required!
Fill out this survey to claim your spot (registration will close on 05/12/2023) :
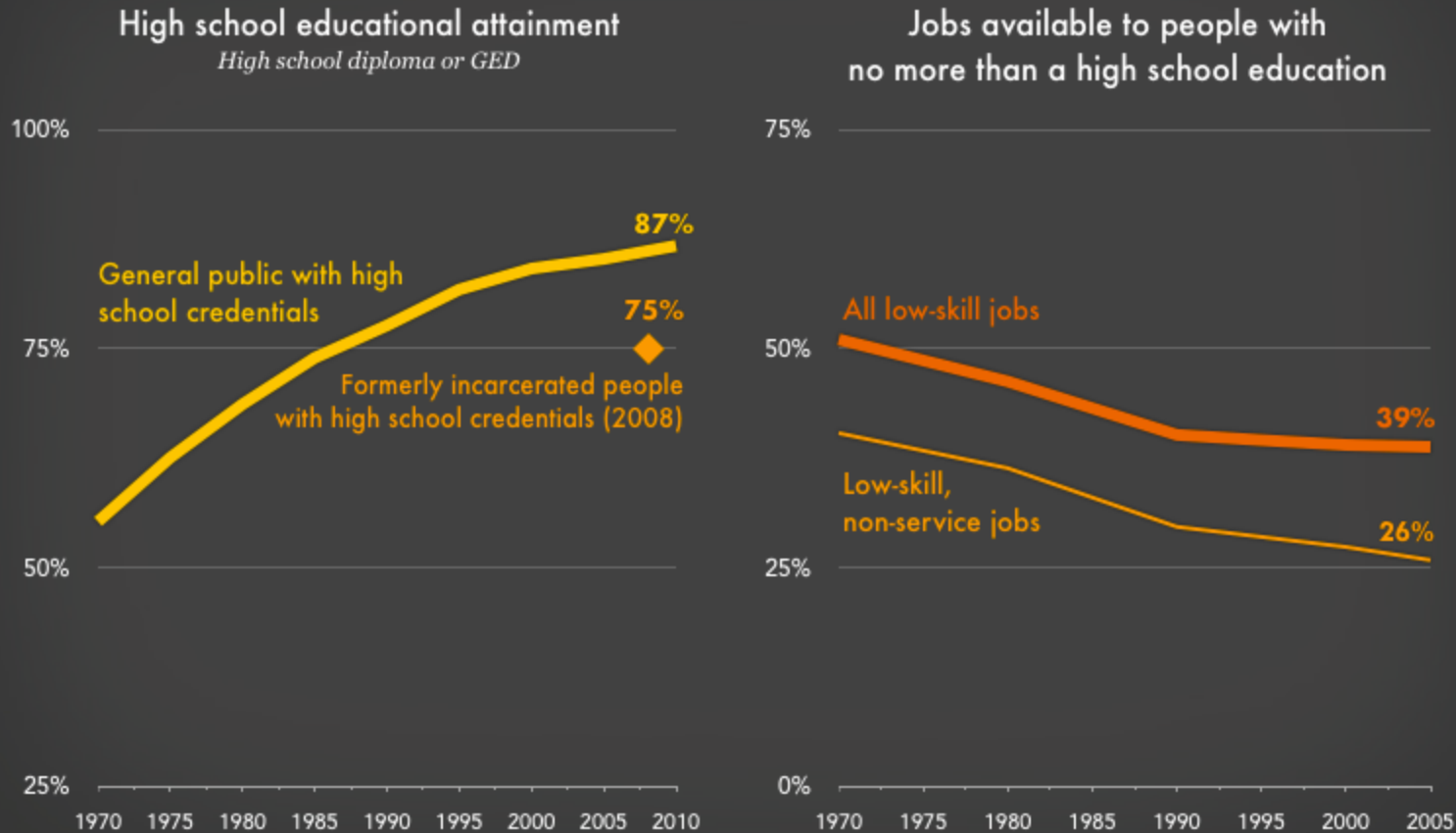
https://bit.ly/DallasDLClinic
Questions? Call 737-304-8970

The COVID-19 protocols of Miles of Freedom will be observed and will be sent out before hand as well as information about parking and other logistics.

MOF
BRIDGING THE GAP FROM PRISON TO PROMISE

TFDP
Texas Fair Defense Project

Arbor Day Foundation™ | American Forests | ISA

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It's getting harder for formerly incarcerated people to compete in an increasingly skilled labor market

High school educational attainment
High school diploma or GED

General public with high school credentials — 87%

Formerly incarcerated people with high school credentials (2008) — 75%

Jobs available to people with no more than a high school education

All low-skill jobs — 39%

Low-skill, non-service jobs — 26%

Sources & data notes: https://www.prisonpolicy.org/reports/education.html

PRISON POLICY INITIATIVE

Needs assessment:

- Education
- Vocational Life Skills
- Specific job skills
- Training
- Credentialing

…and changing public perspectives on urban forestry and arboriculture

Well-meaning but untrained staff for reentry clients

Lack of access to training – time, money, other barriers

Skills-based Credentials

SKILLS VALIDATION

Skills-based Programs

Skills-based Hiring
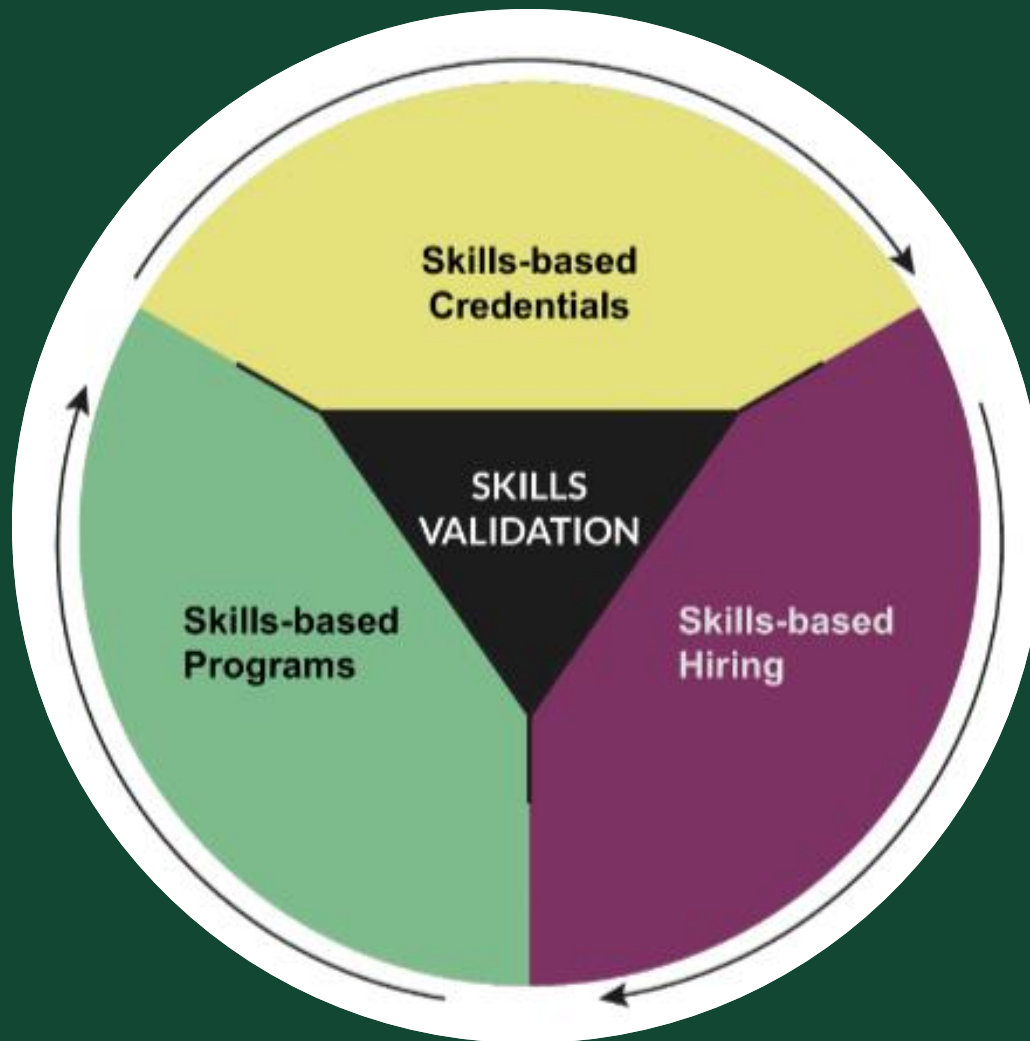
Lack of access to support networks

Examples of introductory Arboriculture and Urban Forestry training curricula

Resource/Training Model	Organization	Description
Tree Equity Pre-Employment Curriculum Tree Equity Curriculum	American Forests	Free curriculum designed to introduce participants to arboriculture, green infrastructure, and urban forestry concepts.
Introduction to Arboriculture Safety Certificate	TCIA	Free online course covering entry-level arboriculture safety basics.
Nature in the city: Turning Knowledge in Urban Forestry Practice	UForest	Free online training for mid-level learners to explore interdisciplinary urban forestry design, planning, and governance.
Introduction to Arboriculture Training	ISA Online Learning	Online learning center offering diverse educational opportunities that range from entry to advance for arborists and urban foresters
Industry Academies, Foundations, TRUST, Reforestation Hub	PowerCorpsPHL and PowerCorps Boston	Leading training programs that offer paid entry-level and youth career training in tree planting, park maintenance, and environmental stewardship.
Urban and Community Forester and Forestry Technician certificates	Society of American Foresters	Professional and advanced credentialing.

Credentials and Training Domains (examples)

Certified Urban and Community Forester (SAF)

1. Urban and Community Forestry Fundamentals (18%)
2. Integrating Urban and Community Forests and Built Environment (15%)
3. Urban and Community Forest Assessment and Planning (16%)
4. Urban and Community Forest Management (17%)
5. Ecosystem Management (14%)
6. Administration (8%)
7. Communication, Engagement, & Relationship Building (12%)

Certified Arborist (ISA)

1. Tree Biology (11%)
2. Tree Identification and Selection (9%)
3. Soil Management (7%)
4. Installation and Establishment (9%)
5. Pruning (14%)
6. Diagnosis and Treatment (9%)
7. Trees and Construction (9%)
8. Tree Risk (11%)
9. Safe Work Practices (15%)
10. Urban Forestry (6%)

American Forests Pre-employment Curriculum

Technical Skills

Tree identification

Plant and soil health

Planting best practices

Pruning and maintenance

Equipment fundamentals

Chainsaw safety

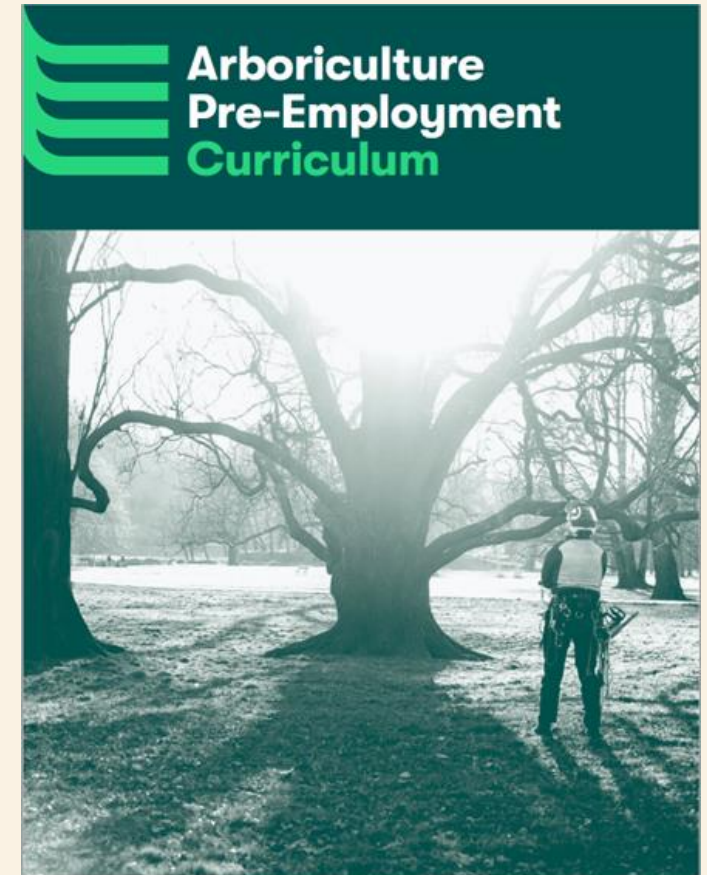Tree climbing

Work Readiness

Communication

Teamwork

Leadership development

Personal finance

Computer literacy

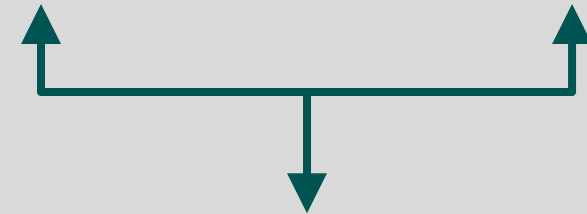Resumes and cover letters

Interview skills

Arboriculture Pre-Employment Curriculum

National Advisory Panel

Yelitza Garcia
American Forests

Tara Costanzo
International Society of Arboriculture

Diamond Dickerson
Corporation for a Skilled Workforce

Vikram Krishnamurthy
American Forests

Bob Harris
Delaware Center for Horticulture, Branches to Chances Program

Michael Jackiewicz
National Reentry Workforce Collaborative

Caitlyn Pollihan
International Society of Arboriculture

Kate Lacouture
Garden Time

Jasmine Oglesby
PowerCorpsPHL

Tia Washington
American Forests

Care Management Approach

- Trauma-informed awareness

- Individual intake assessment

- Pre- and post-training interviews

- Individualized success plan

- Youth engagement considerations

- Regular and ongoing status check-ins

Job Placement and Continued Success

- Building local partnerships

- Support service/resource delivery

- Engaging employers, employer readiness

- Opportunity: job vs. career path

- Pathways to entrepreneurship

Thank you.

Online publication (December 2025)

For more information:

Vikram Krishnamurthy
vkrishnamurthy@americanforests.org